

On the genus *Pterophorus* SCHÄFFER, 1766 in Indonesia (Lepidoptera: Pterophoridae)

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Abstract

The Indonesian representatives of the genus *Pterophorus* SCHÄFFER, 1766 are reviewed. The identity of *Pterophorus niveus* (SNELLEN, 1907) is clarified and the lectotype is designated. Three new species are described: *Pterophorus aliubasignum* sp.n., *P. lieftincki* sp.n., and *P. erratus* sp.n.

Zusammenfassung

Die indonesischen Arten des Genus *Pterophorus* SCHÄFFER, 1766 werden revidiert. Die Identität von *Pterophorus niveus* (SNELLEN, 1907) wird geklärt und die Lectotype festgelegt. Drei neue Arten werden beschrieben: *Pterophorus aliubasignum* sp.n., *P. lieftincki* sp.n., und *P. erratus* sp.n.

Key words: Indo-Australian Region, Indonesia, lectotype designation, Microlepidoptera, new species, *Pterophorus*, Pterophoridae, redescription, review.

Introduction

The collection of the National Natural History Museum in Leiden (NNM), the Netherlands, contains numerous moths collected in Indonesia. These specimens – including the plume moths (Pterophoridae) - have been examined rather poorly in the past. In the last decade the results of studies on the Indonesian plume moth fauna have been published by ARENBERGER (1997a, b), ARENBERGER & GIELIS (1988) and GIELIS (1990).

During the preparation of the manuscript on the Pterophoridae in the series “Microlepidoptera Palaearctica” (ARENBERGER 1995), E. Arenberger was asked to examine the representatives of the genus *Pterophorus* SCHÄFFER, 1766. Some species in this genus turned out to have a distribution in the (sub)tropics of the Old World, from Africa in the west to Australia and the islands in the Pacific Ocean in the east.

The major part of the specimens examined are deposited in the NNM, except for two privately collected specimens in the collection of the author. This paper gives a checklist of all *Pterophorus* species of Indonesia and presents three new species in detail. *Pterophorus nivea* (SNELLEN, 1907) is redescribed, the lectotype is designated.

Checklist of *Pterophorus* SCHÄFFER, 1766 species of Indonesia (LT = Locus typicus):

- Pterophorus melanopoda* (T.B. FLETCHER, 1907) [*Alucita*]. LT: Sri Lanka.
Pterophorus lacteipennis (WALKER, 1864) [*Aciptilus*]. LT: India.
Aciptilus similalis WALKER, 1864. LT: Sarawak.
Aciptilus malacensis ZELLER, 1877. LT: Malacca.
Pterophorus elaeopus (MEYRICK, 1908) [*Alucita*]. LT: India, Assam.
Pterophorus leucadactylus (WALKER, 1864) [*Aciptilus*]. LT: Sri Lanka.
Pterophorus niveodactyla (PAGENSTECHE, 1900) [*Aciptilia*]. LT: Solomon Is., Ralum.
Aciptilia denticulata YANO, 1963. LT: Indonesia, Irian Jaya.
Pterophorus nivea (SNELLEN, 1903) [*Aciptilia*] *bona* sp. LT: Indonesia, Java.
Pterophorus albida (ZELLER, 1852) [*Aciptilia*]. LT: Southern Africa.
Alucita endogramma MEYRICK, 1922. LT: Fiji.
Aciptilia suffiata YANO, 1963. LT: Japan, Okinawa.
Pterophorus aliubasignum sp.n. LT: Indonesia, Irian Jaya.
Pterophorus lieftincki sp.n. LT: Indonesia, Java.
Pterophorus kuningus ARENBERGER, 1997. LT: Indonesia, Java.
Pterophorus erratus sp.n. LT: Indonesia, Sumba.

Pterophorus nivea (SNELLEN, 1903) (Figs. 1, 3-4)

Aciptilia nivea SNELLEN, 1903: 56.

Type material:

Lectotype (by present designation): ♀, Indonesia, Java, Batavia, 1888 (?), gent. CG 3117 (NNM) (Fig. 1).

Paralectotypes: 3 ♂♂, one without abdomen, Java, Batavia, 1882, 1884, 1888, 1891 (NNM); 1 ♂, Java, Pekalongan, no date (van Deventer), gent. CG 3043 (NNM); 1 ♀, Java, Tegal, no date (Lucassen), gent. CG 3118 (NNM).

Additional material: 1 ♂, Sumatra, F. de Koch, 920 m, 1924, CG 3076 (NNM); 1 ♀, [Sulawesi] Central Celebes, 15.IV.1983, leg. Gielis, CG 1955 (coll. Gielis).

The species is characterized by the shining white colour of the wings with sparse black scales, and by the male and female genital structure.

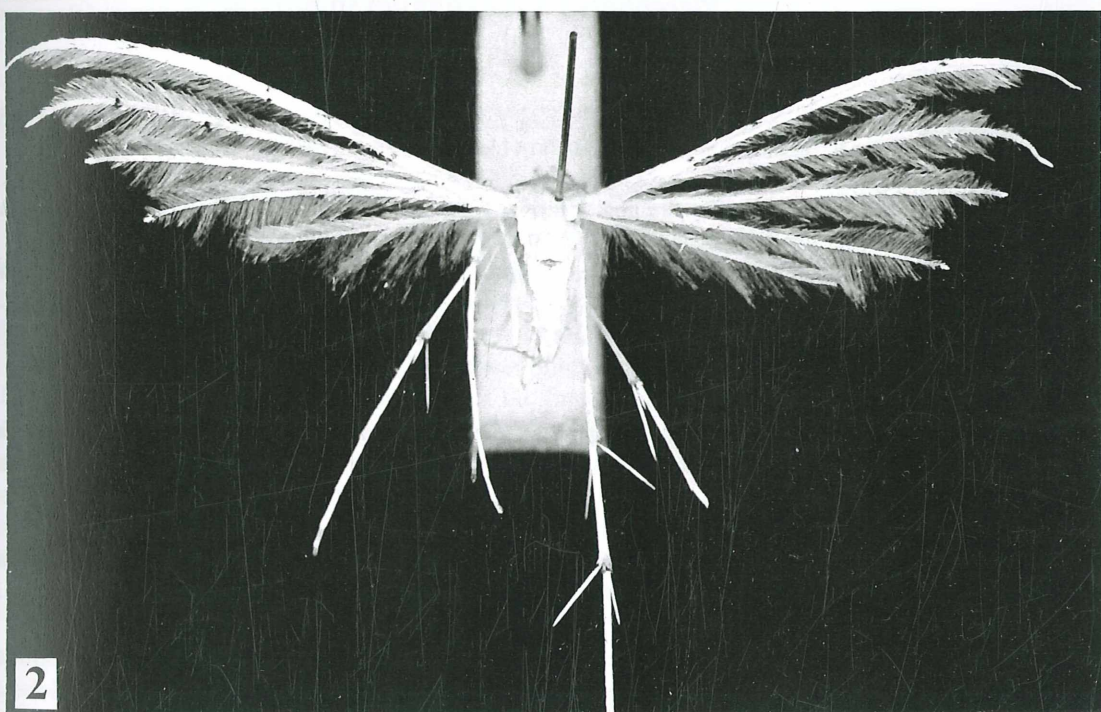
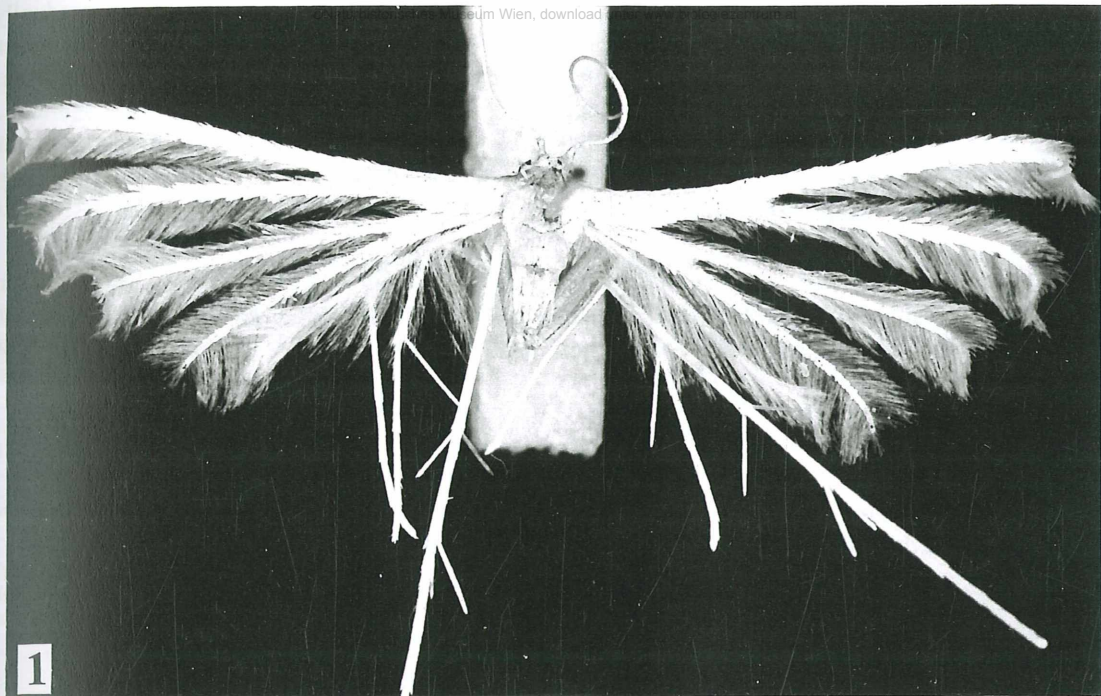
Redescription

External appearance: Male, female. Wingspan 16-18 mm. Head appressedly scaled, white with brownish gloss. Palps white, protruding, one and a half times eye-diameter. Antennae white with brownish gloss, shortly ciliate. Thorax and tegulae white with brownish gloss. Abdomen silvery white. Hindlegs with two pairs of spurs, the inner spurs a little longer than the outer spurs.

Fore wings cleft from 1/3rd, silvery white. Some dispersed black scales, locally in small groups at: 3/4th of dorsum of first lobe; at 2/3rd and 4/5th at dorsum of second lobe. Fringes silvery white, with greyish dashes at: 1/2 and 3/4th of dorsum of first lobe; at 2/3rd of costa of second lobe and at 1/5th, and 3/4th of dorsum of second lobe. Underside silvery white with faint brownish gloss.

Hind wings and fringes silvery white. Underside silvery white with faint brownish gloss. Venous scales pale ochreous-white, in a double row, the costal row is the longer one.

Male genitalia (Fig. 3): Valves asymmetrical. Left valve lanceolate, with curved, centrally positioned saccular spine. Saccular spine just under 1/4th of valve length. Right valve narrower than left valve. Saccular spine longer and wider than left spine, and inner margin serrated. Tegumen and uncus of moderate size. Saccus small and arched. Anellus arms well-developed. Aedeagus rather short and stout, without cornuti.



Figs. 1-2 *Pterophorus*-species from Indonesia:

Fig. 1: *Pterophorus nivea* (SNELLEN, 1903), lectotype ♀, CG 3117 (NNM).

Fig. 2: *Pterophorus aliubasignum* sp.n., paratype ♀, CG 3088 (NNM).

Female genitalia (Fig. 4): Ostium wide. Antrum as long as width of ostium, gradually narrowing. Numerous narrow sclerotized ridges in junction area between ductus bursae and vesica seminalis. Bursa copulatrix and vesica seminalis vesicular. Apophyses anteriores short. Apophyses posteriores two and a half to three times papillae anales.

Ecology: The species is recorded from April and June till September, at altitudes from sea level to 1400 metres. The hostplant is unknown.

Distribution: Sumatra: Loeboeksi Kapang, Fort de Kock, Gunung Dempo; Java: Tegal, Bogor, Batavia, Pekalongan, Mt Gedeh, Tjibodias, Gobang; Sumba: Rara; Sulawesi: Maras; Moluccas: South Batjan, Wobi; Halmahera: Tuguaer-Tasoa; Waigu; Sumba: Laiuku; Irian Jaya: Sorong; Papua New Guinea: Lea.

Remarks: SNELLEN (1903) mentioned a type series of eight specimens. Of this series seven specimens have been recovered.

Pterophorus nivea is differentiated from *P. niveodactyla* (PAGENSTECHER, 1900) by the serrate saccular process in the right valve. This process is smooth in *P. niveodactyla*.

***Pterophorus aliubasignum* sp.n.**

(Fig. 2, 5)

Type material:

Holotype ♀: Indonesia, North West New Guinea (Irian Jaya), Sorong, 8.vii - 14.viii.1948 (MA Liefinck), gent. CG 3090 (NNM).

Paratype 1 ♀: Indonesia, Misool, Fakal, 0-75 m, 8.ix-20.x.1948 (MA Liefinck), gent. CG 3088 (NNM) (Fig. 2).

The species is characterized by the position of the signum in the female genitalia, in the ductus bursae.

Derivatio nominis: The name reflects the position of the signum, which is found in the ductus bursae.

Description:

External appearance: Female. Wingspan 22 - 23 mm. Head appressedly scaled, silvery white, with some erect ochreous-white scales at the collar. Palps silvery white, protruding, one and a half times (paratype) to twice (holotype) the eye-diameter. Antennae silvery white, shortly ciliate. Thorax, tegulae and mesothorax silvery white. Hindlegs silvery white; with two pairs of white spurs with dark tips, the inner spurs a little longer than the outer spurs; the last three tarsal segments distally dark. This resembles *Pterophorus melanopoda* (FLETCHER, 1907) but the dark scales are hardly as pronounced as in this species.

Fore wings cleft from 1/4th, silvery white, with dark margins. The dark spots consist of: a spot at the base of the cleft; costal spots in the first lobe at 1/5th, 1/3rd and 2/3rd; dorsal spot in the first lobe at 1/3rd and 6/7th; a costal spot at 2/5th and an apical spot of the second lobe; a spot at 4/5th and a dorsal spot in the middle of the second lobe. Fringes silvery white with grey patches at: 1/3rd, 2/3rd and 5/6th of the dorsum of the first lobe; at 2/5th of the costa and at 1/4th, 1/2 and 3/4th of the dorsum of the second lobe. Underside silvery white with faint spots as above.

Hind wings silvery white with some black scales at 1/3rd and 3/4th of the first lobe; below the base of the first cleft in the second lobe; the apex, and at 1/5th, 2/5th and 4/5th of the dorsum of the second lobe. Fringes silvery white with a subterminal greyish dash at the costa of the first and second lobe. Underside silvery white. Venous scales creamy white, in a double row, the costal row longer.

Female genitalia (Fig. 5): Ostium narrow. Antrum a narrow tube. Ductus bursae gradually widening, centrally with double signa. The signa consist of two plates of regularly arranged spiculae. Bursa copulatrix vesicular. Vesica seminalis vesicular, shorter than the bursa copulatrix, originating beyond the position of the signum. Lamina post-vaginalis arched around the ostium and antrum. Apophyses anteriores absent. Apophyses posteriores one and a half times papillae anales.

Ecology: The species is recorded from July to October. The hostplant is unknown.

Distribution: Indonesia: Misool; Irian Jaya: Sorong.

***Pterophorus lieftincki* sp.n.**

(Fig. 8)

Type material:

Holotype: ♀, Indonesia, West Java, Djampang, surroundings Soekanegara, 700-1000 m, 20-28.xii.1931 (MA Lieftinck), gent. CG 3106 (NNM).

The species is characterized by the fore wing spots: a transverse one at the base of the cleft and two costal ones in the first lobe.

Derivatio nominis: With the name I wish to honour Dr. Maurits Anne Lieftinck, who, next to being the collector of this species, rendered great contributions to the entomo-fauna of Indonesia.

Description:

External appearance: Female. Wingspan 19 mm. Head appressedly scaled, creamy white with some erect ochreous scales at the collar. Palps short, as long as eye-diameter, protruding, white. Antennae: only first segments present in holotype, white, shortly ciliate. Thorax and tegulae creamy white. Mesothorax white, with three pale brown, dorsal, longitudinal lines.

Fore wings cleft from 5/12th, ochreous-white. Black-brown spots: discal; transverse at the base of the cleft; at 1/5th and 2/3rd of the costa of the first lobe; at 3/4th of the dorsum of the first lobe; at 3/4th and apical at the dorsum of the second lobe; a diffuse brown scaling in the second lobe. Fringes grey-white. Underside ochreous-white with diffuse pale brown scales in the basal half of the wing.

Hind wings creamy white, with dark tips of the lobes. Fringes grey-white. Underside white with pale brown scales as in fore wings. Venous scales pale ferruginous, in a double row, the costal row longer and with more pronounced scales.

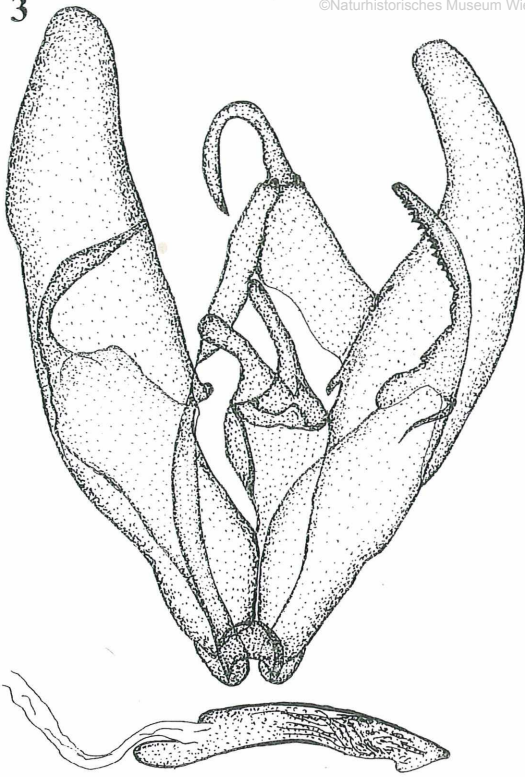
Male genitalia: Unknown.

Female genitalia (Fig. 8): Ostium oblique. Antrum short. Ductus bursae rather wide and gradually transient to bursa copulatrix. Bursa copulatrix vesicular, without signum. Vesica seminalis vesicular and longer than bursa copulatrix. Lamina post-vaginalis arched around the ostium and antrum. Apophyses anteriores not developed. Apophyses posteriores twice the papillae anales.

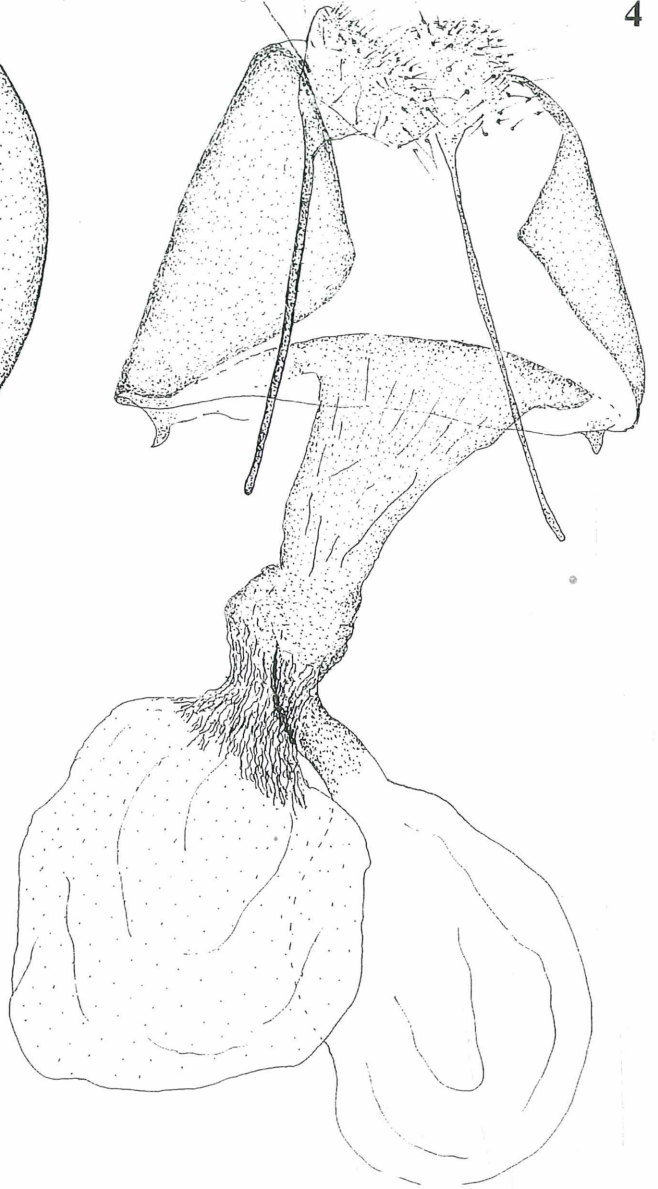
Ecology: The species is found in December, at an altitude between 700 and 1000 metres. The hostplant is unknown.

Distribution: Indonesia: Java.

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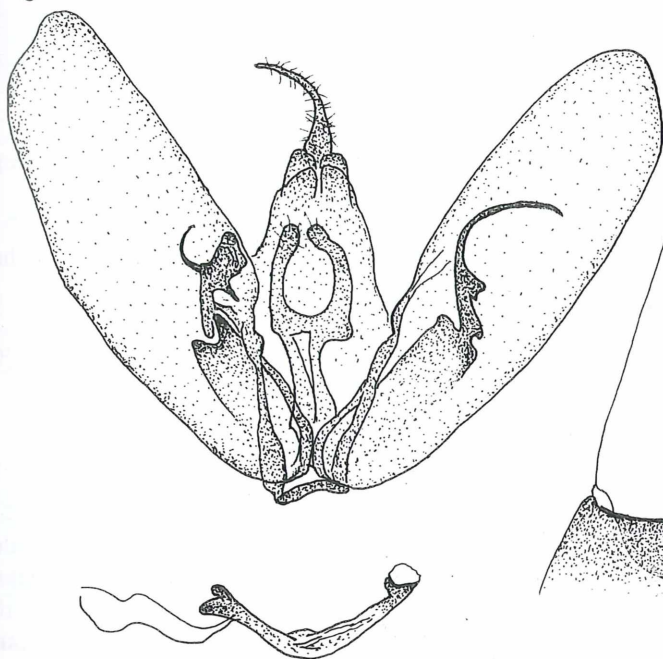
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Figs. 3-5 Genitalia of *Pterophorus* – species from Indonesia:

Fig. 3: *P. nivea* (SNELLEN, 1903), ♂, Gielis gen. prep. 3076.- **Fig. 4:** dto.- ♀, Gielis gen. prep. 1555.- **Fig. 5:** *P. aliubasignum* sp.n., holotype ♀; Gielis gen. prep. 3090.

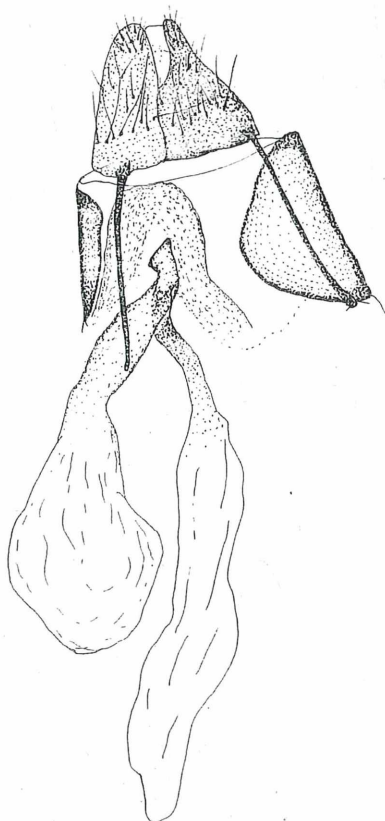
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Figs. 6-8 Genitalia of *Pterophorus* – species from Indonesia:

Fig. 6: *P. erratus* sp.n., holotype ♂, Gielis gen. prep. 4282.- **Fig. 7:** dto.- paratype ♀, Gielis gen. prep. 4283.- **Fig. 8:** *P. lieftincki* sp.n., holotype ♀; Gielis gen. prep. 3106.

Type material:

Holotype: ♂, North Borneo, Sabah, Kinabalu Park, 1650 m, 8.ix.1987 (J Huisman & R de Jong), prep CG 4282 (NNM).

Paratypes: 2 females, N Borneo, Sabah, Kinabalu Park HQ, 1500 m, 15.xii.1987 (J Huisman), gent. CG 4283 (NNM).

The species can only be differentiated from *Pterophorus kuningus* ARENBERGER, 1997, by the genital structures of male and female.

Derivatio nominis: The name reflects the similarity to *P. kuningus*, which gives rise to misidentification.

Description:

External appearance: Male, female. Wingspan 17 - 20 mm. Head appressedly scaled, with erect scales at the collar, ochreous at collar and face, between the antennae shining white. Palps pale ochreous, slightly curved up, one and a quarter times eye-diameter. Antennae pale yellow, shortly ciliate. Thorax, tegulae, mesothorax and abdomen bright ochreous-yellow. Abdomen dorsally and ventrally with three narrow longitudinal lines. Legs ochreous-yellow. Hind legs with dark brown scales before the spur pairs, and at the basal parts of the tarsal segments; spur pairs of unequal length, the proximal pair longer than the distal pair and the inner spurs longer than the outer ones.

Fore wings cleft from 3/7th, bright ochreous-yellow (fainted to yellow-white in worn specimens), markings dark brown. The markings consist of: a small discal spot; triangular-like spot at the base of the cleft, extending along the costa; a mid-costal spot in the first lobe and a mid-dorsal spot in the second lobe; a small dorsal spot at 4/5th in the first lobe and an apical spot in the second lobe. Fringes bright yellow, with grey dashes at 1/3rd, 1/2 and 4/5th at the dorsum of the first lobe; and at 4/5th and 5/6th of the second lobe. Underside bright yellow mixed pale brown, with markings as above.

Hind wings bright yellow. Small, dark dot at the tips of the lobes. Fringes grey-yellow, at the dorsum of the second and third lobes the tip of the fringes dark grey. Underside yellow-grey in the first and second lobe, white in the third lobe; with markings as above. Venous scales ferruginous, in a double row, the costal row pronounced and with larger scales, extending into the second lobe.

Male genitalia (Fig. 6): Valves asymmetrical, the left valve larger than the right valve. In the left valve a small saccular process in shape of a plate with two basally directed spines, a cucullarly directed plate and an arched short saccular spine. In the right valve a larger saccular spine of 1/3rd the valve length, curved to the sacculus, with a blunt thorn-like process at the base. Tegumen and uncus moderately long, slender. Anellus arms long, with blunt tip. Saccus arched, narrow. Aedeagus curved, with blunt tip. No cornutus.

Female genitalia (Fig. 7): Ostium slightly excavated. Antrum slightly longer than wide, centrally bulging out. Ductus bursae rather wide, gradually widening and progressing into the bursa copulatrix (no junction area noticeable). Vesica seminalis vesicular, originating just below the antrum. Bursa copulatrix with a pair of signa in shape of spiculate plates. Apophyses anteriores in shape of sclerotized arches of the 8th sternite. Apophyses posteriores twice the papillae anales.

Ecology: The species is found in November and December at an altitude of 1500-1650 m. The hostplant is unknown.

Distribution: Sabah: North Borneo, the Mount Kinabalu region.

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